

High surface pressure resistant steel parts and methods of producing same

Publication number: EP1273672

Publication date: 2003-01-08

Inventor: TAKAYAMA TAKEMORI (JP); HAMASAKA NAOJI (JP)

Applicant: KOMATSU MFG CO LTD (JP)

Classification:

- International: C23C8/28; C23C8/32; C23C8/34; C23C8/80;
F16C33/30; C23C8/06; C23C8/80; F16C33/30; (IPC1-
7): C22C38/00; C22C38/24; C23C8/12; C23C8/22;
C23C8/26; C23C8/32; C23C8/34

- European: C23C8/28; C23C8/32; C23C8/34; C23C8/80; F16C33/30

Application number: EP20020014033 19971203

Priority number(s): EP19970946091 19971203; JP19960354150 19961217

Also published as:

EP1273672 (B1)

Cited documents:

- US3928087
- GB2294058
- JP4088148
- JP8003720
- JP6017224

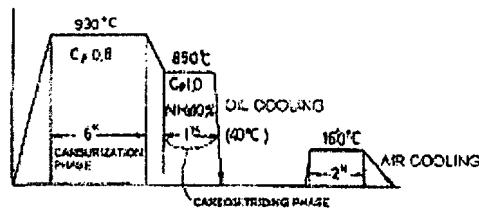
[more >>](#)

[Report a data error here](#)

Abstract of EP1273672

High surface pressure resistant steel parts and their producing methods are disclosed. These steel parts are useful as gears, cams, bearings and similar high-strength compact steel articles which are required to have wear resistance and strength to withstand fatigue in rolling or rolling-slipping applications. In a steel part formed according to the invention, a fine nitride and/or carbonitride having at least an average grain size of 0.3 μm or less is dispersed in the contact surface structure; a multi phase structure composed of martensite, which is divided into extremely fine pieces, forming a disordered shape, by the nitride and/or carbonitride, is formed; and a carbide having a grain size of 3 μm or less is dispersed to increase the hardness of the surface. Such a steel part is produced by carrying out carbonitriding or carburization/carbonitriding so as to precipitate extremely fine AlN, using nitrogen permeating from the surface and by carrying out quenching or quenching/tempering, starting from a temperature region where the parent phase is austenite

FIG. 3



Data supplied from the esp@cenet database - Worldwide